

Transformative Disaster Risk Governance Webinar Series

AI for Disaster Resilience and Sustainable Development

Guest Speakers

Dr. Mduduzi Mbada is the Head of the Policy Unit, (Deputy Director-General), in the Gauteng Government, Office of the Premier, South Africa. He has advised two Premiers of Gauteng and the Minister of Arts and Culture on Policy and Governance matters (2008 – 2019). He was the Chairperson of the Steering of the inaugural Africa Investment Forum in partnership with the African Development (AfDB) in 2018. He was a member of the Wits University Council. He led the team that wrote the Growing Gauteng Together (GGT2030) Plan of Action aimed at Transforming, Modernising and Reindustrialising the Gauteng City Region. He has researched and written on various policy and governance matters, recently together with several scientists published a paper on Leveraging Artificial Intelligence and Big Data to Optimize COVID-19 Clinical Public Health and Vaccination Roll-Out Strategies in Africa. He leads the data, research, and analytics team, working with the Premiers Advisory Committee on COVID-19 to ensure evidence-based decision making by the Provincial Coronavirus Command Council (PCCC). He led the team that developed the Covid-19 Visual Analytics Tool <https://gpcoronavirus.co.za>, which was designed to enable spatial and visual analysis of trends in the numbers of cases (total and daily), hospitalization, deaths, recoveries, tests, and active cases. He holds a Degree Master of Management from the University of Witwatersrand (2013), his research focused on building knowledge institutions. His current research project is on inclusive cities.



A PhD from Columbia University, Bruce Mellado, is a Full Professor at the University of the Witwatersrand, a Senior Researcher of iThemba LABS and serves as the Director of the Institute for Collider Particle Physics. Prof. Mellado is the National Contact Physicist of South Africa at the ATLAS experiment at CERN and is the co-Chair of the Nuclear Particle and Radiation Division of South African Institute of Physics. He is the recipient of several awards and fellowships. Prof. Mellado is an Internationally acclaimed, B1 rated researcher of the National Research Foundation of South Africa. Prof. Mellado is an expert on the Higgs boson – a sub-atomic particle that is thought to give matter its mass – and was a leading participant in its discovery that was announced in 2012 and led to the Nobel Prize in Physics being awarded in 2013 to François Englert and Peter W. Higgs. He has attained and continue to have a number of positions of leadership internationally. Prof. Mellado is a member of the Gauteng Premier's COVID-19 Advisory Committee, where he leads work on predictions. Prof. Mellado is also the Co-President of the Africa-Canada Artificial Intelligence Data Modelling Consortium. The project received grant awards by the IEEE and the IDRC, and also includes partnerships with IBM and Amazon.



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Panelists

Dr. Fred S. Roberts is a Distinguished Professor of Mathematics at Rutgers University and Director of the Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA), a University Center of Excellence of the U.S. Department of Homeland Security (DHS). For 16 years, he directed DIMACS, the Center for Discrete Mathematics and Theoretical Computer Science. Roberts holds the title Emeritus Director of DIMACS. Dr. Roberts has led projects that prepared best practices for stadium security that are widely used by the NFL, NBA, and Major League Baseball; prepared a ground-breaking simulation of the world's busiest bus terminal, the Port Authority bus terminal in New York City, that is usable for planning and decision making about crowd management and emergency evacuation; assisted the TSA with automated tools to quickly adjudicate applications from aviation workers with a criminal record; and leads the DHS University Centers of Excellence Initiative on supply chains during COVID.



Dr. Alex Ferworn is a Professor of Computer Science. He earned his PhD from the University of Waterloo, his MSc from the U of Guelph and his B. Tech from Ryerson. He serves as the Graduate Program Director (GPD) of The Master of Digital Media program and the GPD of the graduate programs in the Department of Computer Science where he is also an Associate Chair. He is the creator of over 30 Certificate and other programs in the Chang School. Alex is also one of the Core Research Scientists of ADERSIM. Previous roles are varied and include; progressively senior roles in telecommunication companies, service as a police auxiliary and as an infantry Company Commander in the Canadian Forces Reserve. His research focuses on "Computational Public Safety". He seeks out collaborations with individuals and groups in fields as varied as Archaeology, Law Enforcement, Physics, Disaster Management, Fire Protection, English, Early Childhood Education, Performance and Fashion. In 2019 his work in finding lost people living with dementia was featured at the Toronto CRAM learning Festival.



Dr. Usman T Khan is an Assistant Professor and Graduate Program Director of Civil Engineering at York University. Prof Khan's research interests lie in Water Resources Engineering, focusing on urban hydrology, including flood risk assessment, sustainable water resource management, and the impacts of climate change on these systems. Prof Khan specializes in developing novel machine learning and artificial intelligence methods for various engineering applications. The role of Civil Engineering in creating vibrant, liveable and sustainable cities is a strong motivator for Prof Khan. He is committed to using his professional practice to meet the challenges that face the urban environment



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Dr. Jianhong Wu is the founding Director of the Laboratory for Industrial and Applied Mathematics at York University, and the Scientific of the Advanced Disaster, Emergency and Rapid Response Simulation initiative (ADERSIM) at York University. He holds the life-time title of University Distinguished Research Professor, and has been a senior Canada Research Chair in Industrial and Applied Mathematics at York University since 2001. In 2017, he was awarded the NSERC/Sanofi Industrial Research Chair in Vaccine Mathematics, Modelling and Manufacturing. During the 2009 influenza pandemic, he was asked by the Public Health Agency of Canada to coordinate the re-alignment of research and collaboration of key Canadian modelers. During the COVID-19 pandemic, he was asked by the Fields Institute to establish and lead The National COVID-19 Modelling Rapid Response Task Force.



Webinar Organizer and the Session Chair

Dr. Jude Kong is an Assistant Professor in the Mathematics & Statistics department at York University. He obtained his PhD from the University of Alberta and his MSc. from the University of Hamburg-Germany and University of L'Aquila-Italy. He is the Director of the Africa-Canada Artificial Intelligence and Data Innovation Consortium, a member of the Canadian Black Scientist Network, a member of the Canadian Center for Disease Modelling and a member of the Fields COVID-19 Modelling Team. Dr. Kong is an expert in machine learning, data science, infectious disease modelling and population dynamics. His principal research objective is to use mathematical/statistical modelling to study the impact of environmental stressors on species distribution and the dynamics of infectious diseases.



Agenda

9:30	Jude Kong	Introduction
9:35	Bruce Mellado	AI for Disaster Resilience and Sustainable Development
10:10	Mduduzi Mbada	
10:30	Q&A	
10:45	Panel discussion	Artificial Intelligence: A powerful tool to combat, mitigate and sustainably manage disaster risks
11:15	Q&A with panel	
11:30	Jude Kong	Closing remarks

Date/Time and Location

April 30, 2021

9:30 am-11:30 am EDT, Online.

Registration

Please register [here](#).



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